

**ABSTRACT**

Compositions for lanthionizing keratin fibers comprising at least one organic nucleophile and at least one hydroxide ion generator, wherein the at least one organic nucleophile is present in an amount effective to increase the tensile strength of the keratin fibers. Pretreatment compositions for keratin fibers comprising at least one organic nucleophile, wherein the pretreatment composition is applied prior to applying a relaxing composition and further wherein the at least one organic nucleophile is present in an amount effective to increase the tensile strength of the keratin fibers. Methods and multicomponent kits for lanthionizing keratin fibers to achieve relaxation of the keratinous fibers using at least one organic nucleophile.